

Conference Abstract

Community Curation of Nomenclatural and Taxonomic Information in the Context of the Collection Management System JACQ

Heimo Rainer[‡], Andreas Berger^{§,‡}, Tanja M. Schuster[‡], Johannes Walter[‡], Dieter Reich[§], Kurt Zernig[‡], Jiří Danihelka^{¶,‡}, Hana Galušková[¶], Patrik Mráz[‡], Natalia Tkach[«], Jörn Hentschel[»], Jochen Müller[»], Sarah Wagner[^], Walter Berendsohn[^], Robert Lücking[^], Robert Vogt[^], Lia Pignotti[?], Francesco Roma-Marzio[^], Lorenzo Peruzzi[^]

[‡] Natural History Museum Vienna, Vienna, Austria

[§] University of Vienna, Vienna, Austria

[|] Universalmuseum Joanneum, Graz, Austria

[¶] Masaryk University, Faculty of Science, Brno, Czech Republic

[#] Institute of Botany of the Czech Academy of Sciences, Průhonice, Czech Republic

[⊠] Herbarium and Department of Botany, Charles University in Prague, Prague, Czech Republic

[«] University Halle-Wittenberg, Halle / Saale, Germany

[»] Friedrich-Schiller-University Jena, Jena, Germany

[^] Institut fuer Botanik, Technische Universität Dresden, Dresden, Germany

[^] Berlin Botanic Garden, Berlin, Germany

[‡] Freie Universität Berlin, Berlin, Germany

[?] Università Firenze, Firenze, Italy

[^] University of Pisa, Pisa, Italy

Corresponding author: Heimo Rainer (heimo.rainer@nhm-wien.ac.at)

Received: 11 Sep 2023 | Published: 12 Sep 2023

Citation: Rainer H, Berger A, Schuster TM, Walter J, Reich D, Zernig K, Danihelka J, Galušková H, Mráz P, Tkach N, Hentschel J, Müller J, Wagner S, Berendsohn W, Lücking R, Vogt R, Pignotti L, Roma-Marzio F, Peruzzi L (2023) Community Curation of Nomenclatural and Taxonomic Information in the Context of the Collection Management System JACQ. Biodiversity Information Science and Standards 7: e112571.

<https://doi.org/10.3897/biss.7.112571>

Abstract

Nomenclatural and taxonomic information are crucial for curating botanical collections. In the course of changing methods for systematic and taxonomic studies, classification systems changed considerably over time (Dalla Torre and Harms 1900, Durand and Bentham 1888, Endlicher 1836, Angiosperm Phylogeny Group et al. 2016). Various approaches to store preserved material have been implemented, most of them based on

scientific names (e.g., families, genera, species) often in combination with other criteria such as geographic provenance or collectors.

The collection management system, [JACQ](#), was established in the early 2000s then developed to support multiple institutions. It features a centralised data storage (with mirror sites) and access via the Internet. Participating collections can download their data at any time in a comma-separated values (CSV) format. From the beginning, JACQ was conceived as a collaboration platform for objects housed in botanical collections, i.e., plant, fungal and algal groups. For these groups, various sources of taxonomic reference exist, nowadays online resources are preferred, e.g., [Catalogue of Life](#), [AlgaeBase](#), [Index Fungorum](#), [Mycobank](#), [Tropicos](#), [Plants of the World Online](#), International Plant Names Index (IPNI), [World Flora Online](#), [Euro+Med](#), [Anthos](#), [Flora of Northamerica](#), [REFLORA](#), [Flora of China](#), [Flora of Cuba](#), Australian Virtual Herbarium ([AVH](#)).

Implementation and (re)use of PIDs

Persistent identifiers (PIDs) for names (at any taxonomic rank) apart from PIDs for taxa, are essential to allow and support reliable referencing across institutions and thematic research networks (Agosti et al. 2022). For this purpose we have integrated referencing to several of the above mentioned resources and populate the names used inside JACQ with those external PIDs. For example, *Salix rosmarinifolia* is accepted in [Plants of the World Online](#) while [Euro+Med Plantbase](#) considers it a synonym of *Salix repens* subsp. *rosmarinifolia*. Either one can be an identification of a specimen in the JACQ database.

Retrieval of collection material

One strong use case is the curation of material in historic collections. On the basis of outdated taxon concepts that were applied to the material in history, "old" synonyms are omnipresent in historical collections. In order to retrieve all material of a given taxon, it is necessary to know all relevant names.

Future outlook

In combination with the capability of Linked Data and the [IIIF](#) (International Image Interoperability Framework) technology, these PIDs serve as crucial elements for the integration of decentralized information systems and reuse of (global) taxonomic backbones in combination with collection management systems (Gamer and Kreyenbühl 2022, Hyam 2022, Loh 2017).

Keywords

nomenclature, floras, taxonomy, PID, linked data, IIIF

Presenting author

Heimo Rainer

Presented at

TDWG 2023

Conflicts of interest

The authors have declared that no competing interests exist.

References

- Agosti D, Benichou L, Addink W, Arvanitidis C, Catapano T, Cochrane G, Dillen M, Döring M, Georgiev T, Gérard I, Groom Q, Kishor P, Kroh A, Kvaček J, Mergen P, Mietchen D, Pauperio J, Sautter G, Penev L (2022) Recommendations for use of annotations and persistent identifiers in taxonomy and biodiversity publishing. Research Ideas and Outcomes 8 <https://doi.org/10.3897/rio.8.e97374>
- Angiosperm Phylogeny Group, Chase MW, Christenhusz MJM, Fay MF, Byng JW, Judd WS, Soltis DE, Mabberley DJ, Sennikov AN, Soltis PS, Stevens PF (2016) An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG IV. Botanical Journal of the Linnean Society 181 (1): 1-20. <https://doi.org/10.1111/boj.12385>
- Dalla Torre KWv, Harms H (1900) Genera siphonogamarum ad systema Englerianum conscripta, ab autoribus C.G. de Dalla Torre et H. Harms. Gen. siphon. <https://doi.org/10.5962/bhl.title.26684>
- Durand T, Bentham G (1888) Index generum phanerogamorum usque ad finem anni 1887 promulgatorum in Benthami et Hookeri "Genera plantarum" fundatus, cum numero specierum synonymis et area geographica / conscripsit Th. Durand ; opus approbatum ad illustri doctore J.D. Hooker. Index gen. phan. <https://doi.org/10.5962/bhl.title.26685>
- Endlicher S (1836) Genera plantarum secundum ordines naturales disposita /auctore Stephano Endlicher. Gen. Pl. [Endlicher] <https://doi.org/10.5962/bhl.title.728>
- Gamer E, Kreyenbühl E (2022) IIIF collections as Research Data – an Integrated Approach by the Zentralbibliothek Zürich. Zenodo <https://doi.org/10.5281/zenodo.6365733>
- Hyam R (2022) Using IIIF to publish your specimen images. Zenodo <https://doi.org/10.5281/zenodo.6593928>
- Loh G (2017) Linked data and IIIF: Integrating taxonomy management with image annotation. 2017 Pacific Neighborhood Consortium Annual Conference and Joint Meetings (PNC) <https://doi.org/10.23919/pnc.2017.8203521>